

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of setting an initial error value of a rate-matching algorithm in a hybrid ARQ (Automatic Repeat Request) system, the method comprising the steps of:

(a) determining an original initial error value, which is originally given for a rate-matching algorithm generating a rate-matching pattern for ~~[[a]]~~ the hybrid ARQ system;

(b) ~~calculating a modular operator K;~~

(c) ~~calculating an incremental error value that depends on a number of retransmissions made; and~~

(d) ~~calculating a new initial error value by adding said incremental error value with said original initial error value, said new initial error value being used to determine puncturing or repeating bit positions of a data frame.~~

2. (Currently Amended) The method of claim 1, ~~wherein said modular operator K is obtained by further comprising calculating a modular K using the following equation:~~

$$K = \begin{cases} \text{integer} \left( \frac{e_{\text{plus}}}{e_{\text{minus}}} \right), & \text{if } \left( \frac{e_{\text{plus}}}{e_{\text{minus}}} \right) \geq 1 \\ \text{integer} \left( \frac{e_{\text{minus}}}{e_{\text{plus}}} \right), & \text{if } \left( \frac{e_{\text{plus}}}{e_{\text{minus}}} \right) < 1 \end{cases},$$

where  $e_{\text{plus}}$  and  $e_{\text{minus}}$  are originally given, and integer (A) is defined by

$$\text{integer}(A) = N(A) \text{ or } N(A) + 1, \text{ and}$$

where  $N(A)$  represents the maximum of a set of integer numbers being less than A.

3. (Original) The method of claim 2, wherein said incremental value is obtained by

$$\text{incremental error value} = (i \bmod K) \cdot e_{\text{minus}}.$$

4. (Original) The method of claim 1, wherein said new initial error value is used for a downward link or an upward link.

5. (Currently Amended) A method of setting an initial error value of a rate-matching algorithm in a hybrid ARQ (Automatic Repeat Request) system, the method ~~comprising the steps of:~~

(a) determining an original initial error value, which is originally given for a rate-matching algorithm generating a rate-matching pattern for ~~[[a]]~~ the hybrid ARQ system;

~~(b) calculating a modular operator K;~~

~~(c) calculating a first incremental value for a puncturing mode, said first incremental value depending on a number of retransmissions made ; and~~

~~(d) calculating a new initial error value by adding a second incremental value to said original initial value, said second incremental value depending on said first incremental value and said new initial error value being used to determine puncturing or repeating bit positions of a data frame.~~

6. (Currently Amended) The method of claim 5, ~~wherein said modular operator K is obtained by~~ further comprising calculating a modular K using the following equation:

$$K = \begin{cases} \text{integer}\left(\frac{e_{\text{plus}}}{e_{\text{minus}}}\right), & \text{if } \left(\frac{e_{\text{plus}}}{e_{\text{minus}}}\right) \geq 1 \\ \text{integer}\left(\frac{e_{\text{minus}}}{e_{\text{plus}}}\right), & \text{if } \left(\frac{e_{\text{plus}}}{e_{\text{minus}}}\right) < 1 \end{cases},$$

where  $e_{\text{plus}}$  and  $e_{\text{minus}}$  are originally given, and integer (A) is defined by

$\text{integer}(A) = N(A)$  or  $N(A) + 1$ , and

where  $N(A)$  represents the maximum of a set of integer numbers being less than A.

7. (Original) The method of claim 6, wherein said first incremental value is obtained by

$$e_{\text{HARQ}}(i) = i,$$

where  $e_{\text{HARQ}}(i)$  represents said first incremental value, and  $i$  represents said number of retransmissions made.

8. (Original) The method of claim 7, wherein said new initial error value is obtained by

$$e_{\text{ini-new}} = e_{\text{ini-old}} + (e_{\text{HARQ}}(i) \bmod K) \cdot e_{\text{minus}},$$

where  $e_{\text{ini-new}}$  represents said new initial error value, and  $e_{\text{ini-old}}$  represents said original initial error value.

9. (Currently Amended) The method of claim 6, wherein said first incremental value is obtained by

$$e_{\text{HARQ}}(i) = \text{PBR}_{i \% K},$$

where  $PBR_{i \% K}$  represents a first list of numbers obtained by excluding any number being greater than or equal to  $K$  from  $BR_{j,n}$ , and

where  $BR_{j,n}$  represents a second list of numbers obtained by bit-reversing  $j$  with  $n$ , and  $n$  represents any integer number that satisfies  $2^{n-1} < K \leq 2^n$ .

10. (Original) The method of claim 9, wherein said new initial error value is obtained by

$$e_{\text{ini-new}} = e_{\text{ini-old}} + (e_{\text{HARQ}}(i) \bmod K) \cdot e_{\text{minus}},$$

where  $e_{\text{ini-new}}$  represents said new initial error value, and  $e_{\text{ini-old}}$  represents said original initial error value.

11. (Currently Amended) A method of setting an initial error value of a rate-matching algorithm in a hybrid ARQ system, the method comprising ~~the steps of:~~

(a) determining an original initial error value, which is originally given for a rate-matching algorithm generating a rate-matching pattern for ~~[[a]]~~ the hybrid ARQ system;

~~(b) calculating a modular operator  $K$ ;~~

(e) calculating a first incremental value for a repeating mode, said first incremental value depending on a number of retransmissions made ; and

(d) calculating a new initial error value by adding a second incremental value to said original initial value, said second incremental value depending on said first incremental value and said new initial error value being used to determine bits that are to be punctured or repeated in a data frame.

12. (Currently Amended) The method of claim 11, ~~wherein said modular operator K~~ is obtained by further comprising calculating a modular K using the following equation:

$$K = \begin{cases} \text{integer} \left( \frac{e_{\text{plus}}}{e_{\text{minus}}} \right), & \text{if } \left( \frac{e_{\text{plus}}}{e_{\text{minus}}} \right) \geq 1 \\ \text{integer} \left( \frac{e_{\text{minus}}}{e_{\text{plus}}} \right), & \text{if } \left( \frac{e_{\text{plus}}}{e_{\text{minus}}} \right) < 1 \end{cases},$$

where  $e_{\text{plus}}$  and  $e_{\text{minus}}$  are originally given, and integer (A) is defined by

$$\text{integer}(A) = N(A) \text{ or } N(A) + 1, \text{ and}$$

where N(A) represents the maximum of a set of integer numbers being less than A.

13. (Original) The method of claim 12, wherein said first incremental value is obtained by

$$e_{\text{HARQ}}(i) = i ,$$

where  $e_{\text{HARQ}}(i)$  represents said first incremental value, and  $i$  represents said number of retransmissions made.

14. (Original) The method of claim 13, wherein said new initial error value is obtained by

$$e_{\text{ini-new}} = e_{\text{ini-old}} + (e_{\text{HARQ}}(i) \bmod K) \cdot e_{\text{minus}} ,$$

where  $e_{\text{ini-new}}$  represents said new initial error value, and  $e_{\text{ini-old}}$  represents said original initial error value.

15. (Currently Amended) The method of claim 12, wherein said first incremental value is obtained by

$$e_{\text{HARQ}}(i) = \text{PBR}_{i \% K} ,$$

where  $\text{PBR}_{i \% K}$  represents a first list of numbers obtained by excluding any number being greater than or equal to  $K$  from  $\text{BR}_{j,n}$ , and

Serial No. 10/029,253  
Amdt. dated October 4, 2004  
Reply to Office Action of June 3, 2004

Docket No. K-0381

where  $BR_{j,n}$  represents a second list of numbers obtained by bit-reversing  $j$  with  $n$ , and  $n$  represents any integer number that satisfies  $2^{n-1} < K \leq 2^n$ .

16. (Original) The method of claim 15, wherein said new initial error value is obtained by

$$e_{\text{ini-new}} = e_{\text{ini-old}} + (e_{\text{HARQ}}(i) \bmod K) \cdot e_{\text{minus}},$$

where  $e_{\text{ini-new}}$  represents said new initial error value, and  $e_{\text{ini-old}}$  represents said original initial error value.